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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/600,788	02/13/2001	Paul Edward Cheney	F7414(C)	1446

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UNILEVER
PATENT DEPARTMENT
45 RIVER ROAD
EDGEWATER, NJ 07020

EXAMINER

BHAT, NINA NMN

ART UNIT	PAPER NUMBER
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1761

DATE MAILED: 09/30/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/600,788

Applicant(s)

CHENEY ET AL.

Examiner

N. Bhat

Art Unit

1761

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2000.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Art Unit: 1761

DETAILED ACTION

1. This application does not contain an abstract of the disclosure as required by 37 CFR 1.72(b). An abstract on a separate sheet is required.
2. The information disclosure statement filed 3-02-2001 fails to comply with 37 CFR 1.98(a)(3) because it does not include a concise explanation of the relevance, as it is presently understood by the individual designated in 37 CFR 1.56(c) most knowledgeable about the content of the information, of each patent listed that is not in the English language. It has been placed in the application file, the information referred to therein have been considered to the extent that the examiner could, i.e., the examiner obtained and English Abstract only of the non-English Patents. The examiner further notes that Applicant indicated that translations of various references would be forthcoming. Applicant is also advised that in the future the IDS listing PTOL 1449 requires the following fields to be filled out, the Patent Number, the Inventor Name or Country, the Date. Applicant has left off the dates on both the International Patents as well as on the US Patents. The examiner has struck one reference on the IDS as being not considered. The reference EPO 0410512 relates to an electric lamp and has nothing to do with a frozen confection and accordingly has not been considered. How this reference relates to a frozen food is unclear, and, as such this reference has not been considered.
3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

Art Unit: 1761

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) do not apply to the examination of this application as the application being examined was not (1) filed on or after November 29, 2000, or (2) voluntarily published under 35 U.S.C. 122(b). Therefore, this application is examined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

4. Claims 1-6 are rejected under 35 U.S.C. 102(b) as being anticipated by Clemmings et al.

Clemmings teaches a method of making and ice cream product which can be stored without requiring a hardening step which includes preparing an ice cream composition and adding an anti-freeze protein to the mixture of ice cream ingredients which is stored at temperature of -10 °F to 20 °F . The resultant frozen food product inherently would possess the average ice crystal size as claimed and one could extrapolate the ice crystal diameter from looking at the Figures presented in the Figures 3-6, where Clemmings teaches that at -20°F the average mean ice crystal size where anti-freeze protein is added to the ice cream is of about 34 microns meaning that there ice crystal size can be larger than 34 microns and smaller than 34 microns (note Figures 3 and 4). Since the average mean ice crystal size is about 34 it would be inherently possible that at a different temperature of -10°F would provide an ice crystal

Art Unit: 1761

size of 0.01 to 20 micrometers as the composition is the same as has been claimed by Clemmings thus anticipating applicant's frozen food product..[Note Column 3, lines 24-68 and Column 4, lines 24-53]

5. Claims 1-7 are rejected under 35 U.S.C. 102(e) as being clearly anticipated by GB 2 328136.

GB 2 328136 teaches frozen food product comprising AFPs the product has an ice particle size upon recrystallization of less than 20 microns more preferred from 5-15 microns which is within the range as claimed by applicant. GB 2 328136 also teaches that the AFPs are added within the same range as claimed.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over GB 2,328,136.

GB 2 328136 teach the invention substantially as claimed.

Art Unit: 1761

GB 2 328136 teach a method of preparing a frozen food product comprising AFP wherein the a mixture of food ingredients is mixed with antifreeze peptides either during or after the freezing processes and forces are applied to the product by one or more of the following method which inc vibration to the product or application of hydraulic shock to the product. GB 2 328136 specifically teach that the inclusion of AFP material in frozen food produces provide improved recrystallization properties in combination with good texture. By using vibrational forces or by using a hydraulic shock to the product, solidification of a liquid can be controlled so that the ice crystal formed is also controlled. The vibration can be applied during or after the freezing of the product and most preferred to be applied aft a pre-freezing step at a temperature of -4°C or lower. the time period for applying the vibrations depends on the speed of freezing. Generally the total period of the vibrations will be from 1 second to 2 hours, most preferably between 1 minute and 60 minutes. For a hydraulic shock, it is preferred that the ice cream or frozen product is subjected to one hydraulic shock during or after the freezing process. GB 2 328136 teach that the frozen food product comprising AFPs are processed food products for example frozen bakery products, doughs, batters, cakes, soups, sauces, pizzas, frozen vegetable products like compote, mashed potato, tomato paste. The preferred product is a frozen confectionery product. which include ice cream, frozen yogurt, sherbet, sorbet, ice milk frozen custards, water ices, granitas and frozen fruit purées. The ice crystals formed after recrystallization is within the same range as taught by applicant as well as the amount of AFPs added to the frozen confection is added within the same range as taught by applicant.

Art Unit: 1761

However, GB 2 328136 does not specifically recite that the post compaction step uses a screw extruder, nor specifically that the during the prefreezing step there nucleation dominated step.

GB 2 328136 specifically teaches that vibration is preferably used in a pre-freezing step, which will control the solidification process as well as the ice crystal growth formation in the ice confectionery product. Alternatively or subsequently, the frozen ice confectionery product can be subjected to a hydraulic shock pressure, which at least has the equivalent function of compaction of the frozen confectionery product.

It would have been obvious to one having ordinary skill in the art at the time the invention was made from reading GB 2 328136 to provide AFPs in frozen confections for its know property of improving the freezing tolerance in foodstuff as well as capable of controlling the average particle size. GB 2 328136 further teaches that it is recognized that AFP in ice confections may also lead to an adverse effect in the ice crystal wherein they tend to form aggregates leading to a hard and brittle product, to avoid the aggregate formation during solidification, GB 2 328136 teaches that applying specific forces to the product during or after the freezing process can lead to less aggregation of ice crystals in the final product. Although the specific use of a screw extruder has not been taught the suggestion of applying a hydraulic shock or compaction has been fairly suggested thus rendering the invention as a whole obvious.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to N. Bhat whose telephone number is 703-308-3879. The examiner can normally be reached on Monday-Friday, 9:30AM-6:00PM.

Art Unit: 1761

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Milton Cano can be reached on 703-308-3959. The fax phone numbers for the organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-306-5665.



N. Bhat
Primary Examiner
Art Unit 1761

September 26, 2002